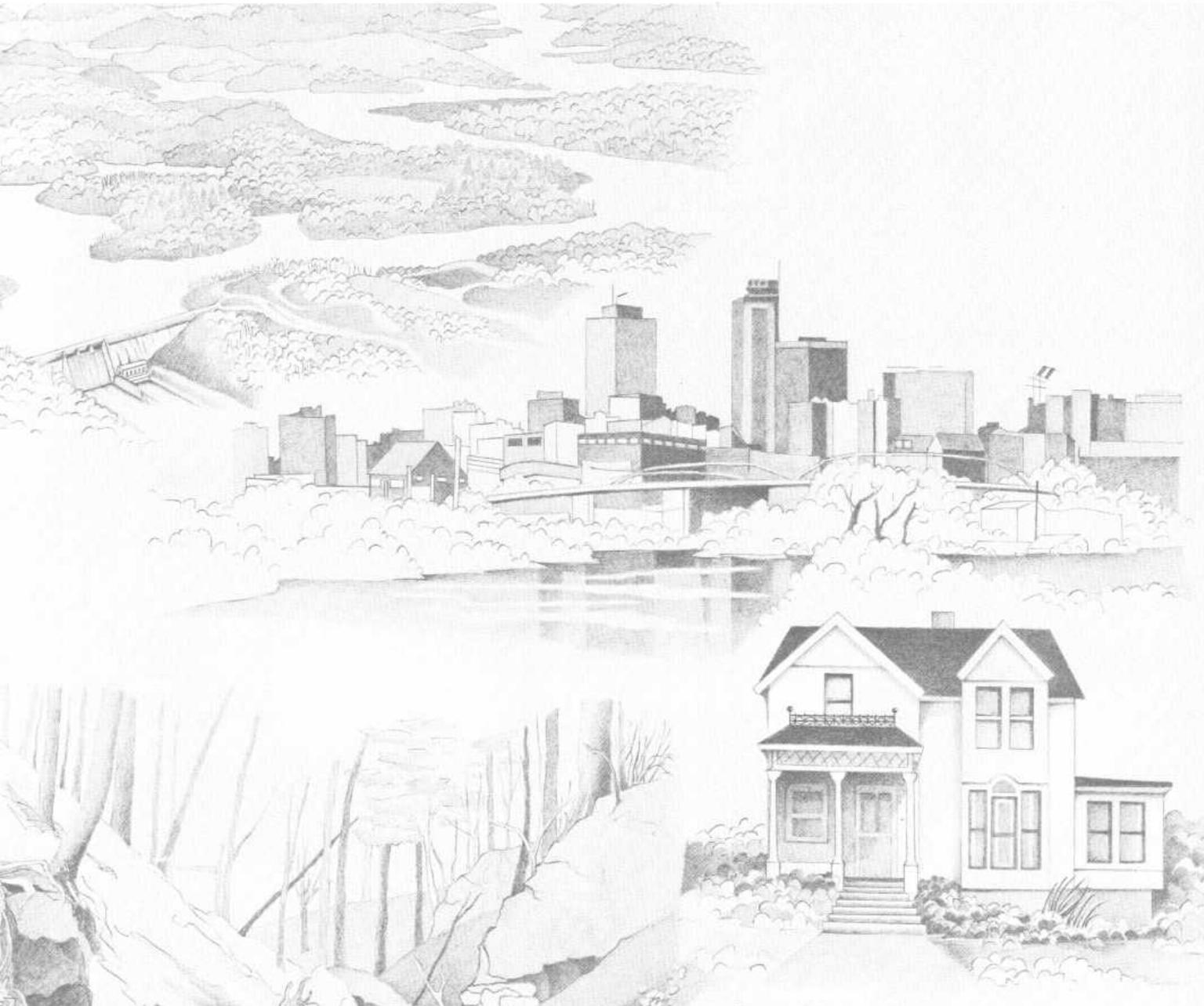


DROUGHT-RELATED IMPACTS ON MUNICIPAL AND MAJOR SELF-SUPPLIED INDUSTRIAL WATER WITHDRAWALS IN TENNESSEE--PART B



Prepared by
U. S. GEOLOGICAL SURVEY

in cooperation with
TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT, Division of Water Management
TENNESSEE VALLEY AUTHORITY, Office of Natural Resources and Economic Development,
Division of Air and Water Resources, Regional

Table 5.--Public water-supply facilities, Upper Cumberland River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Smith--Continued</u>									
									to meet Carthage Water Department demands for more than 90 days. Flooding and turbidity. Storage capacity equals 600,000 gallons.
**Cordell Hull UD+	5C	800	293	Carthage WD	-	N/A	.040	50.0	Category 5. Storage capacity equals 100,000 gallons.
**Twenty-Five UD+	5C	650	250	Carthage WD	-	N/A	0.160	246.2	Category 5. Storage capacity equals 100,000 gallons.
*Smith UD	5C	3,380	1,300	Caney Fork River (7.3)	19.389	3.000	.716	167.5	Category 1. Storage capacity equals 2,500,000 gallons.
**Alexandria WS (DeKalb County)	5C	1,200	450	Smith UD	-	N/A	.150	125.0	Category 1. Storage capacity equals 450,000 gallons.
<u>Van Buren</u>									
*Spencer UD	5A	3,300	1,100	Impoundment (Benton Branch) (1.8)	.000	1.000	.255	77.3	Category 6. Storage capacity equals 325,000 gallons with an additional 300,000 gallons planned.
*Taft Youth Center WD	5A	825	2	Impoundment (Bee Creek) (7.3)	.000	.600	.325	236.4	Category 6. Storage capacity equals 1,190,000 gallons.
**Fall Creek Falls UD	5A	1,120	443	Taft Youth Center WD	-	N/A	.130	116.1	Category 6. Storage capacity equals 500,000 gallons.

Table 5.--Public water-supply facilities, Upper Cumberland River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Warren</u>									
*McMinnville WD	5B	12,500	5,000	Barren Fork River (6.3)	28.437	3,500	2.850	152.3	Category 1. Water shortages may occur during summer for lack of treatment facilities. Storage capacity equals 4,100,000 gallons.
**Centertown UD	5B	3,360	1,120	McMinnville WD	-	N/A	.210	62.5	Category 1. Shortage of water at times. Storage capacity equals 250,000 gallons.
**Irving College UD	5B	1,863	621	McMinnville WD	-	N/A	.125	67.1	Category 1. Shortage of water and storage at times. Storage capacity equals 100,000 gallons.
**Lower Collins UD	5B	3,150	1,050	McMinnville WD	-	N/A	0.205	65.1	Category 1. Shortage of water and storage at times. Storage capacity equals 300,000 gallons.
**North Warren UD	5B	2,877	959	Minnville WD	-	N/A	.205	71.3	Category 1. Shortage of water at times. Storage capacity equals 200,000 gallons.
**Viola UD	5B	2,000	544	McMinnville WD	-	N/A	.085	42.5	Category 1. Flooding of underground pumps at pumping station. Storage capacity equals 500,000 gallons.
**West Warren County UD	5B	1,100	550	McMinnville WD	-	N/S	.116	105.5	Category 1. Storage capacity equals 100,000 gallons.

Table 5.--Public water-supply facilities, Upper Cumberland River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>White</u>									
*Bon de Croft UD	5A	1,510	520	Calfkiller River, Firestone Lake (8.2)	6.463	.322	.145	58.3	Category 5. Storage capacity equals 250,000 gallons.
**Pleasant Hill UD (Cumberland Co.)	5A	1,500	453	Bon de Croft UD	-	N/A	.057	38.0	Category 5. Storage capacity equals 80,000 gallons. Occasional pressure drops due to leaks at Bon de Croft.
*Sparta WS	5A	12,000	2,800	Calfkiller River (16.1)	6.463	3.133	2.000	115.2	Category 3. Storage capacity equals 4,500,000 gallons.
**Dewhite UD	5A	5,000	1,020	Sparta WS	-	N/A	.207	41.4	Category 3. Storage capacity equals 300,000 gallons.
**O'Conner UD	5A	3,400	1,230	Sparta WS	-	N/A	.300	88.2	Category 3. Odor at times. Storage capacity equals 300,000 gallons.
**Quebeck-Walling UD+	5A	2,207	797	Sparta WS	-	N/A	.110	49.8	Category 3.

Table 6.--Self-supplied commercial and industrial water users, Upper Cumberland River basin

[*System received all water from primary surface-water or ground-water source]

County, industry name (SIC code), and location by city	Tributary basin No.	Number of employees	Water source and intake location (river mile)	Source capacity (Mgal/d)	Average water use (Mgal/d)	Average consumptive water use (Mgal/d)	Additional information (principal products, existing problems, and so forth)
<u>Smith</u>							
*Jersey Miniere Zinc Company (3333); Elmwood	5C	190	Caney Fork River (4.0)	25.851	0.765	0.007	Category 1. Product - Zinc ore.

Table 7.--Public water-supply facilities, Duck-Buffero River basin

[*System received all water from primary surface-water or ground-water source; ** purchases part or all water from a primary (*) source; *** purchases part or all water from a secondary (**) source; **** purchases part or all water from a tertiary (***) source]

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Bedford</u>									
*Shelbyville WD	34A	16,915	5,772	Duck River (227.0)	102.000	4.500	3.500	188.6	Category 1. The controlling upstream reservoir for this reach of the Duck River is Normandy Dam located at river mile 248.6 on the Duck River. Excessive concentrations of manganese and iron due to reservoir releases from Normandy Dam. Storage capacity equals 3,000,000 gallons.
**Bedford County UD	34A	3,960	1,650	Shelbyville WS	-	.750	.256	73.6	Category 1. While the Bedford County UD currently buys a part of its water from the Shelbyville WD under contract, the District has built its own treatment plant on the Duck River at mile 202.4. This plant has a treatment capacity of 0.750 Mgal/d and will be fully operational in June 1984. Subsequent to June of 1984, Bedford County UD will withdraw all of its water from the Duck River at mile 202.4. The estimated source capacity at mile 202.4 is 98.000 Mgal/d. The controlling upstream reservoir for this reach on the Duck River is Normandy Dam located at mile 248.6 on the

Table 7.--Public water-supply facilities, Duck-Buffero River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Bedford--Continued</u>									
									Duck River. Shelbyville WD will continue to provide water when necessary during peak use periods or emergencies. Storage capacity equals 100,000 gallons.
**Flat Creek Water Cooperative	34A	780	279	Shelbyville WD Tullahoma WD	- -	N/A	0.060 .005	83.3	Categories 1 and 5. Storage capacity equals 100,000 gallons.
*Wartrace WS	34A	1,320	550	Cascade Spring	1.700	N/A	.307	106.1	Category 7. Storage capacity equals 225,000 gallons.
**Bell Buckle WS	34A	1,216	380	Wartrace WS	-	N/A	.150	123.4	Category 7. Periodic water shortages due to Wartrace's inability to provide adequate water at times. Storage capacity equals 100,000 gallons.
**Normandy Road Cooperative UD	34A	123	35	Wartrace WS	-	N/A	.017	138.2	Category 7. Serious water losses due to deteriorating water mains and lines.
<u>Coffee</u>									
*Duck River Utility Commission	34A	-	-	Duck River, Normandy Reservoir (about 255.0)	See additional information	7.500	3.500	-	Category 5. Total storage in Normandy Reservoir equals 66,600 acre-feet at normal minimum pool elevation of 859 feet above sea level. This provides adequate water to meet the Commission's water demands for more than 90 days. The Commission serves water only to the Manchester and Tullahoma WD's in

Table 7.--Public water-supply facilities, Duck-Buffero River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Coffee--Continued</u>									
**Manchester WD	34A	7,750	3,100	Duck River Utility Commission	-	N/A	1.200	134.8	the Duck-Buffero and Elk-Shoal River basins, respectively. Storage capacity equals 500,000 gallons. Category 5. Storage capacity equals 2,450,000 gallons.
***Hillsville UD	34A	3,329	880	Manchester WD	-	N/A	.155	46.6	Category 5. Storage capacity equals 400,000 gallons.
**Tullahoma WD	34A	19,353	6,800	Duck River Utility Commission	-	N/A	2.300	112.2	Category 5. This district also provides about 0.005 Mgal/d of water to the Flat Creek Water Cooperative in the Duck-Buffero River basin and 0.123 Mgal/d to the Center Grove-Winchester Springs UD in the Elk-Shoal River basin. Storage capacity equals 4,500,000 gallons.
<u>Dickson</u>									
*Dickson WD	34D	9,500	2,845	Wells (2) City Reservoir	0.878 See additional information	1.000	.800 .200	83.7	Categories 5 and 7. The estimated storage capacity of the city reservoir is 150 acre-feet of which about 140 acre-feet or 45,000,000 gallons are available for water supply with no inflow. This provides sufficient water to meet the city's water demands for more than 90 days. Storage capacity equals 850,000 gallons.

Table 7.--Public water-supply facilities, Duck-~~Buffalo~~ River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Dickson</u> --Continued									
**West Piney UD	34D	1,200	343	Dickson WD	-	N/A	0.066	55.0	Categories 5 and 7.
**Sylvia - Tennessee City Pond UD	34D	1,752	600	Dickson WD	-	N/A	.139	79.3	Categories 5 and 7. Storage capacity equals 100,000 gallons.
<u>Hickman</u>									
*Bon Aqua Lyles UD	34D	3,542	1,250	Mill Creek (9.9) Spring (1)	0.000 -	0.662	.300 .003	85.5	Categories 4 and 9. The spring is used only in case of emergency situations. Storage capacity equals 421,000 gallons.
*Centerville WS	34C	5,700	1,630	Big Swan (Swan) Creek (1.1)	27.000	1.152	.650	114.0	Category 3. Storage capacity equals 1,500,000 gallons.
*Turney Center WS	34D	750	1	Duck River (40.0)	179.000	.648	.102	136.0	Category 1. The controlling upstream reservoir for this reach of the Duck River is Normandy Dam located at river mile 248.6 on the Duck River. Turney Center serves one prison with 750 inmates. Storage capacity equals 540,000 gallons.
<u>Humphreys</u>									
*McEwen WD	34D	2,112	697	Wells (2)	.288	N/A	.200	94.7	Category 7. Storage capacity equals 400,000 gallons.
*Waverly WS	34D	5,428	2,385	Duck River (8.3) Well (1)	327.000 .720	2.000	.210 .590	147.4	Categories 1 and 7. The controlling upstream reservoir for this reach of the Duck River is Normandy Dam located at river mile

Table 7.--Public water-supply facilities, Duck-Buffero River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Humphreys</u> --Continued									
									248.6 on the Duck River. Storage capacity equals 1,600,000 gallons.
<u>Lawrence</u>									
*Summertown WS	35	1,065	355	Wells (2)	-	0.216	0.760	71.4	Category 9.
<u>Lewis</u>									
*Hohenwald WS	35	5,517	1,935	Well (1) Spring (1)	0.792 .576	N/A	.350 .270	112.4	Category 7. Note, a new well with a source capacity of 0.864 Mgal/d has also been developed. Storage capacity equals 800,000 gallons.
<u>Marshall</u>									
*Lewisburg WS	34B	8,850	3,989	Duck River (181.0) City Lake	96.000	4.000	1.728 .540	214.8	Categories 1 and 5. The controlling upstream reservoir for this reach of the Duck River is Normandy Dam located at river mile 248.6 on the Duck River. The estimated storage capacity of the city lake is 135 acre-feet of which approximately 12.5 acre-feet or 40,000,000 gallons are available for water supply with no inflow. This provides adequate water to meet Lewisburg's water demands for more than 90 days. Occasional taste and odor problems in the city lake and the Duck River due to reservoir

Table 7.--Public water-supply facilities, Duck-Buffero River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Marshall--Continued</u>									
**Cornersville WS	34B	754	325	Lewisburg WS	-	N/A	.067	75.6	releases from Normandy Dam. Storage capacity equals 5,750,000 gallons.
**Marshall County Board of Public Utilities	34B	1,780	659	Lewisburg WS Cornersville WS	- -	N/A	0.300 .010	147.2	Categories 1 and 5. Storage capacity equals 200,000 gallons.
**Chapel Hill WS	34B	1,028	365	Marshall County Board of Public Utilities	-	N/A	.048	46.7	Categories 1 and 5. Occasional water-supply shortages. Storage capacity equals 100,000 gallons.
<u>Maury</u>									
*Columbia WD	34C	38,250	11,592	Duck River (133.7)	111.000	12.500	7.633	184.2	Category 1. The controlling upstream reservoir for this reach of the Duck River is Normandy Dam located at river mile 248.6 on the Duck River. Seasonal problems caused by algae growth which requires additional treatment resulting in increased costs. Storage capacity equals 8,400,000 gallons.
**Mount Pleasant WS	34C	5,516	1,978	Springs (5) Columbia WD	.790 -	1.000	.800 .050	154.1	Categories 1 and 8. Storage capacity equals 1,175,000 gallons.

Table 7.--Public water-supply facilities, Duck-Buffalo River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Maury--Continued</u>									
**Spring Hill WD	34C	1,200	435	Columbia WD	-	N/A	.350	85.0	Category 1. Inadequate water pressure in the distribution mains and lines due to increased demand by the HB and TS Utility District. Storage capacity equals 50,000 gallons.
***HB and TS Utility District (Hillsboro and Thompson Station Utility District)	34C	5,903	1,851	Spring Hill WD Harpeth Valley UD	- See additional information	N/A	.245 .283	89.4	Categories 1 and 5. Harpeth Valley UD is located in Davidson County and withdraws its water (5,000 Mgal/d) from the Cumberland River which is regulated by Cheatham Dam located at river mile 148.7 on the Cumberland River. Cheatham Dam's storage capacity equals 84,200 acre-feet at normal minimum pool elevation of 382 feet above sea level. This provides adequate water to meet Harpeth Valley's water demands for more than 90 days. Storage capacity equals 600,000 gallons.
**Maury County WS	34B	2,900	1,116	Columbia WS Spring Hill WD	- -	N/A	0.189 .003	66.2	Category 1. Storage capacity equals 100,000 gallons.
<u>Perry</u>									
*Linden WD	35	1,020	560	Buffalo River (43.0)	68.000	0.967	.199	185.3	Category 3. Storage capacity equals 538,000 gallons.

Table 7.--Public water-supply facilities, Duck-Buffero River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Perry--Continued</u>									
**Buffalo River UD	35	202	63	Linden WD	-	N/A	.010	49.5	Category 3. Storage capacity equals 500,000 gallons.
*Lobelville WD	35	835	364	Buffalo River (29.6)	101.000	.288	.125	149.7	Category 3. Storage capacity equals 340,000 gallons.
<u>Wayne</u>									
*Waynesboro WS	35	2,364	924	Green River (13.6)	1.600	.864	.312	132.0	Category 3. Storage capacity equals 805,000 gallons.

Table 8.--Self-supplied commercial and industrial water users, Duck-Buffalo River basin

[*System received all water from primary surface-water or ground-water source]

County, industry name (SIC code), and location by city	Tributary basin No.	Number of employees	Water source and intake location (river mile)	Source capacity (Mgal/d)	Average water use (Mgal/d)	Average consumptive water use (Mgal/d)	Additional information (principal products, existing problems, and so forth)
<u>Hickman</u>							
*Levi Strauss and Company (2328); Centerville	34C	470	Big Swan (Swan) Creek (about 1.1)	27.000	0.700	-	Category 3. Product - Men's jeans.
*M. C. West and Company (1475); Columbia	34B	14	Duck River (92.2)	121.000	.720	-	Category 1. The controlling upstream reservoir for this reach of the Duck River is Normandy Dam located at river mile 248.6 on the Duck River. Product - Phosphate mining.
<u>Lewis</u>							
*Lewis Products (2251); Hohenwald	35	650	Wells (2) Hohenwald WS	- -	.500 .001	0.270	Category 9. Product - Hose. Storage equals 100,000 gallons.
<u>Marshall</u>							
*Lewisburg Materials (1422); Lewisburg	34B	15	Rock Quarry	See additional information	.112	-	Source capacity data for this rock quarry is not available due to inadequate data. Product - Crushed limestone.
<u>Maury</u>							
*E. I. DuPont De Nemours and Company, Inc. (3079); Columbia	34C	128	Duck River (about 130.4) Columbia WD	111.000 -	.463 .192	.029	Category 1. The controlling upstream reservoir for this reach of the Duck River is Normandy Dam located at river mile 248.6 on the Duck River. Product - Cellulose sponge. Occasional flooding and turbidity problem.
*Occidental Chemical Corporation, Godwin Washer Plant (1475); Columbia	34C	7	Duck River (130.5)	111.000	2.667	-	Category 1. The controlling upstream reservoir for this reach of the Duck River is Normandy Dam located at river mile 248.6 on the Duck River. Product - Washed phosphate ore.
*Occidental Chemical Corporation, Williamsport Washer Plant (2819); Columbia	34C	15	Duck River (113.8)	113.000	6.660	-	Category 1. The controlling upstream reservoir for this reach of the Duck River is Normandy Dam located at river mile 248.6 on the Duck River. Product - Washed phosphate ore.

Table 8.--Self-supplied commercial and industrial water users, Duck-Buffalo River basin--Continued

County, industry name (SIC code), and location by city	Tributary basin No.	Number of employees	Water source and intake location (river mile)	Source capacity (Mgal/d)	Average water use (Mgal/d)	Average consumptive water use (Mgal/d)	Additional information (principal products, existing problems, and so forth)
<u>Maury--Continued</u>							
*Occidental Chemical Corporation, Furnace Plant (2819); Columbia	34C	275	Duck River (130.5) Ponds (13) Columbia WD	111.000 - -	0.014 .176 .475	0.074	Categories 1 and 5. The controlling upstream reservoir for this reach of the Duck River is Normandy Dam located at river mile 248.6 on the Duck River. The estimated storage capacity of the 13 rain-filled ponds is about 80 acre-feet of which about 70 acre-feet or 23,000,000 gallons is available for water supply with no inflow. This provides ample water to meet Occidental's water demands from this source for more than 90 days. Product - Elemental phosphorous.
*Monsanto Industrial Chemicals Company (2819); Columbia	34C	600	Duck River (119.9) Greenlick Creek Ponds (2)	112.000 2.600 See additional information	14.400 12.960 5.760	1.980	Categories 1, 4, and 5. The controlling upstream reservoir for this reach of the Duck River is Normandy Dam located at river mile 248.6 on the Duck River. The estimated storage of the two ponds equals about 3,910 acre-feet of which approximately 3,870 acre-feet or 1,241,000 gallons of water are available for water supply with no inflow. This provides adequate water to meet Monsanto's water demands from this source for more than 90 days. Product - Elemental phosphorous. Excessive turbidity at the intake area after heavy rains. Storage capacity equals about 1,270,000,000 gallons.
*Presnell Phosphate Company, Inc. (2819); Columbia	34C	Unavailable	Rutherford Creek	.000	.960	-	Category 4. Product - Elemental phosphorous.
*Stauffer Chemical Company, Inc. (2879); Mount Pleasant	34C	302	West Fork Creek (15.4) Mount Pleasant WS	See additional information -	.420 .035	.115	Source capacity data for West Fork Creek is not available due to the lack of adequate records. Product - Pesticides. Storage capacity equals 690,000 gallons.
*Stauffer Chemical Company, Globe Plant (2819); Mount Pleasant	34C	36	Scotts Creek (0.13) Mount Pleasant WS	See additional information -	.486 .001	.001	Source capacity data for Scotts Creek is not available because of the lack of adequate records. Product - Washed phosphate ore. Storage capacity equals 736,404,000 gallons.
*Stauffer Furnace Plant (2819); Mount Pleasant	34C	280	Big Bigby Creek (16.2) Mount Pleasant WS	2.300 -	.900 .100	-	Category 3. Product - Elemental phosphorous. Storage capacity equals 24,000 gallons.

Table 8.--Self-supplied commercial and industrial water users, Duck-Buffalo River basin--Continued

County, industry name (SIC code), and location by city	Tributary basin No.	Number of employees	Water source and intake location (river mile)	Source capacity (Mgal/d)	Average water use (Mgal/d)	Average consumptive water use (Mgal/d)	Additional information (principal products, existing problems, and so forth)
<u>Wayne</u>							
*True Temper Corporation (2499); Waynesboro	35	18	Barlow Branch (0.5) Well (1)	See additional information -	0.266 .001	-	Category 9. Source capacity data for Barlow Branch is not available due to a lack of adequate data. Product - Hickory handles.

Table 9.--Public water-supply facilities, Elk-Shoal River basin

[*System received all water from primary surface-water or ground-water source; ** purchases part or all water from a primary (*) source; *** purchases part or all water from a secondary (**) source; **** purchases part or all water from a tertiary (***) source]

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Franklin</u>									
*Belvidere Rural UD	27A	1,227	230	Well (1) Winchester WS	0.180 -	N/A	0.080 -	65.2	Categories 5 and 7. Winchester WS provides water to Belvidere Rural UD in emergency situations. Storage capacity equals 70,000 gallons.
*Cowan WS	27A	2,125	800	Spring (1)	.130	0.504	.210	98.8	Category 8. Additional storage is needed to avoid periodic shortages. Storage capacity equals 250,000 gallons.
*Decherd Water Works	27A	3,275	1,045	Wells (2)	.720	.561	.199	60.8	Category 7. Storage capacity equals 400,000 gallons.
*Estill Springs WD	27A	2,280	760	Spring (1)	.547	.495	.245	107.5	Category 7. Storage capacity equals 375,000 gallons plus a 200,000-gallon tank for emergency use.
*Huntland WS	27B	1,152	390	Wells (3)	.290	.280	.095	82.5	Category 7. Storage capacity equals 500,000 gallons.
*Sewanee Utility Department	25	4,000	860	Jackson and O'Donnel Lakes	See additional information	.680	.303	80.8	Category 5. Together the estimated capacity of Jackson and O'Donnel Lakes is about 340 acre-feet of which approximately 260 acre-feet or 85,000,000 gallons is available for water supply with no flow. While this provides sufficient water to meet Sewanee's water demands for more than 90 days, it should be

Table 9.--Public water-supply facilities, Elk-Shoal River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Franklin--Continued</u>									
*Winchester UD	27A	10,054	3,634	Elk River, Tims Fork Reservoir (154.0)	See additional information	3.000	1.141	97.9	noted that the dams forming these lakes are leaking. Sewanee Utility Department serves about 2,500 people on a year-round basis and 4,000 people when Sewanee College is in session. Category 5. Total storage in Tims Ford Reservoir equals 325,400 acre-feet at normal minimum pool elevation of 865 feet above sea level. This provides sufficient water to meet this UD's water demands for more than 90 days. Storage capacity equals 1,550,000 gallons.
**Center Grove - Winchester Springs UD	27A	3,700	984	Winchester UD Tullahoma WD	- See additional information	N/A	.157 .123	75.7	Category 5. Water purchased from the Tullahoma Water Department is withdrawn from Normandy Reservoir on the Duck River via the Duck River Utility Commission and Tullahoma Water Department in Coffee County. Total storage in Normandy Reservoir is 66,600 acre-feet at normal minimum pool elevation of 859 feet above sea level. While this coupled with the water available from Tims Ford Reservoir is more than adequate to meet the District's water

Table 9.--Public water-supply facilities, Elk-Shoal River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Franklin--Continued</u>									
									demands for more than 90 days, occasional water-supply shortages are experienced during high demand periods because of inadequate transmission and distribution line facilities and a lack of water storage facilities.
<u>Giles</u>									
*Ardmore WS	26	1,512	720	Wells (3)	0.360	0.360	0.215	142.2	Category 7. In emergency situations, Ardmore WS receives water from the North Limestone WS in Limestone County, Alabama. Storage capacity equals 225,000 gallons.
*Pulaski WS	27C	7,764	3,251	Richland Creek (24.1)	8.600	3.600	1.600	162.4	Category 3. Storage capacity equals 4,550,000 gallons.
**Fairview UD	27C	555	180	Pulaski WS	-	N/A	.108	99.1	Category 3.
***Lynnville UD	27C	500	225	Fairview UD	-	N/A	.053	106.0	Category 3. Storage capacity equals 85,000 gallons.
**Minor Hill UD	27D	3,200	800	Pulaski WS	-	N/A	.164	51.3	Category 3. Storage capacity equals 200,000 gallons.
**Tarpley Shop UD	27C	1,852	529	Pulaski WS	-	N/A	.067	36.2	Category 3. Tarpley Shop UD provides water to South Giles UD in emergency situations. Storage capacity equals 100,000 gallons.

Table 9.--Public water-supply facilities, Elk-Shoal River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Gileg--Continued</u>									
*South Giles UD	27C	2,480	750	Ricnland Creek (2.2)	10.100	.288	.130	52.4	Category 3. Storage capacity equals 486,000 gallons.
<u>Grundy</u>									
*Monteagle WS	25	2,500	500	Laurel Creek Lake (2 springs feed this lake)	See additional information	.835	.250	100.0	Category 5. The estimated capacity of Laurel Creek Lake is approximately 1,430 acre-feet of which about 1,310 acre-feet or 427,000,000 gallons are available for water supply with no inflow. This provides adequate water to meet Monteagle's water demands for more than 90 days. Storage capacity equals 300,000 gallons.
*Tracy City WS	25	1,750	950	Rattle Snake Stream and Willow Springs (2)	-	1.440	0.390	222.9	Category 9. During drought periods, the springs go dry forcing the city to get its water from 2 nearby lakes whose estimated storage capacity is unknown. Storage capacity equals 675,000 gallons.
<u>Lawrence</u>									
*Iron City UD	28A	998	285	Holly Creek Spring (1)	1.300 .024	.129	.190 .190	38.1	Categories 3 and 8. Storage capacity equals 225,000 gallons.

Table 9.--Public water-supply facilities, Elk-Shoal River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Lawrence--Continued</u>									
*Lawrenceburg WS	28A	10,332	4,283	Shoal Creek (55.9) Hope Spring (1)	7.800 1.100	6.450	2.112 1.382	309.5	Categories 3 and 8. Lawrenceburg's treatment plant can treat up to 4.000 Mgal/d from Shoal Creek and 2.450 Mgal/d from Hope Spring. Storage capacity equals 3,650,000 gallons.
**Fall River Road UD	28A	805	230	Lawrenceburg WS	-	N/A	.060	74.5	Categories 3 and 8.
**Flatwoods UD	28A	360	113	Lawrenceburg WS	-	N/A	.133	202.8	Categories 3 and 8. Storage capacity equals 150,000 gallons.
***Ethridge UD	28A	1,200	375	Flatwoods UD	-	N/A	.060	50.0	Categories 3 and 8.
**New Prospect UD	28A	1,040	260	Lawrenceburg WS	-	N/A	0.063	60.6	Categories 3 and 8. Storage capacity equals 100,000 gallons.
**Northeast Lawrence UD	28A	700	217	Lawrenceburg WS	-	N/A	.040	57.1	Categories 3 and 8.
*Leoma UD	27D	1,200	400	Spring (1)	-	N/A	.090	75.0	Category 9. Storage capacity equals 110,000 gallons.
*Loretto WS+	28A	1,830	610	Spring (1)	0.648	0.368	.153	83.6	Category 7.
*St. Joseph WS	28A	987	336	Spring (1)	0.360	N/A	.086	87.1	Category 7. Storage capacity equals 300,000 gallons.
*Westpoint UD	28A	350	120	Factory Creek (4.2)	9.600	.072	.021	60.0	Category 3. Storage capacity equals 50,000 gallons.
<u>Lincoln</u>									
*Fayetteville WS	27B	7,075	3,300	Elk River (93.9) Pearl Hollow Spring (1)	68.500 .500	3.100	1.944 .500	316.0	Categories 1 and 7. The controlling upstream reservoir for this reach of the Elk

Table 9.--Public water-supply facilities, Elk-Shoal River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Lincoln--Continued</u>									
**Kelso WS	27B	75	26	Fayetteville WS	-	N/A	.015	200.0	River is Tims Ford Dam located at river mile 133.3 on the Elk River. Storage capacity equals 3,120,000 gallons. Categories 1 and 7.
**Lincoln County Board of Public Utilities	27B	5,900	2,349	Wells (4) Fayetteville WS	.400 -	N/A	.228 .025	42.9	Categories 1 and 7. Storage capacity equals 1,204,500 gallons.
**Mulberry UD	27B	625	195	Fayetteville WS	-	N/A	.055	88.0	Categories 1 and 7. Storage capacity equals 50,000 gallons.
**Petersburg WS	27B	500	265	Fayetteville WS	-	N/A	.100	200.0	Categories 1 and 7. Water leaks and discoloration problems resulting from old galvanized steel transmission and distribution lines. Storage capacity equals 250,000 gallons.
**Timberlake UD	27B	112	35	Fayetteville WS	-	N/A	0.013	116.1	Categories 1 and 7.
<u>Marion</u>									
*Orme WS	25	163	48	Spring (1)	0.070	N/A	.017	104.3	Category 7. Storage capacity equals 17,000 gallons.
*South Pittsburg WS+	25	3,589	1,500	Tennessee River (about 417.0)	5,250.000	2.000	.800	222.9	Category 1. The controlling upstream reservoir for this reach of the Tennessee River is Nickajack Dam located at river mile 424.7 on the Tennessee River.

Table 9.--Public water-supply facilities, Elk-Shoal River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Moore</u>									
*Lynchburg WS	27B	700	384	East Fork Mulberry Creek (14.4) Tims Ford Reservoir	1.200 See additional information	.288	.055 .083	197.1	Categories 3 and 5. Total storage in Tims Ford Reservoir is 325,400 acre-feet at normal minimum pool elevation of 865 feet above sea level. This provides adequate water to meet Lynchburg's water demands for more than 90 days. Occasional rust problems and water losses due to leaking mains and distribution lines. Storage capacity equals 705,000 gallons.

Table 10.--Self-supplied commercial and industrial water users, Elk-Shoal River basin

[*System received all water from primary surface-water or ground-water source]

County, industry name (SIC code), and location by city	Tributary basin No.	Number of employees	Water source and intake location (river mile)	Source capacity (Mgal/d)	Average water use (Mgal/d)	Average consumptive water use (Mgal/d)	Additional information (principal products, existing problems, and so forth)
<u>Coffee</u>							
*Arnold Air Force Development Center (7391); Tullahoma	27A	4,300	Elk River, Woods Reservoir (174.0)	See additional information	60.769	1.799	Category 5. Total storage in Woods Reservoir equals 8,700 acre-feet at normal minimum pool elevation of about 950 feet above sea level. This provides adequate water to meet the Center's water demands for more than 90 days. Product - Wind tunnel cooling. Storage capacity equals 58,000,000 gallons.
*Cumberland Mountain Sand Company (1442 and 1446); Hillsboro	27A	10	Well (1) Ponds (5)	- See additional information	.100 .400	.025	Categories 5 and 9. While the estimated total storage in these ponds is unknown, existing data indicate that these ponds could provide about 75 acre-feet or 25,000,000 gallons of water for water supply with no in-flow. This would provide adequate water to meet the Company's water demands for more than 90 days. Product - Sand. However, during drought periods water supply from the ponds is marginal in nature.
*Lannon Manufacturing Company, Inc. (3111); Tullahoma	27A	100	Well (1) Tullahoma WS	0.144 -	.115 .011	.012	Category 7. Product - Leather. Storage capacity equals 48,000 gallons.
*Tennessee Dickel Distilling Company (2085); Tullahoma	27A	70	Cascade Creek Wartrace WS	See additional information -	.431 .175	.051	Source capacity data for Cascade Creek is not available due to a lack of adequate data. Product - Distilled and blended liquors.
<u>Giles</u>							
*Giles County Materials (1422); Pulaski	27C	15	Pond (1)	See additional information	.104	-	Source capacity data for this pond is not available due to the lack of adequate data. Product - Crushed limestone. Storage capacity equals 210,528 gallons.
*Pulaski Rubber Company (3011 and 3069); Pulaski	27C	120	Well (1) Pulaski WS	- -	.547 .019	-	Category 9. Product - Rubber products.

Table 10.--Self-supplied commercial and industrial water users, Elk-Shoal River basin--Continued

County, industry name (SIC code), and location by city	Tributary basin No.	Number of employees	Water source and intake location (river mile)	Source capacity (Mgal/d)	Average water use (Mgal/d)	Average consumptive water use (Mgal/d)	Additional information (principal products, existing problems, and so forth)
<u>Lawrence</u>							
*Union Carbide Corporation (3624); Lawrenceburg	28A	71	Shoal Creek (51.7) Lawrenceburg WS	7.800 -	.863 .137	-	Category 3, 8, and 9. Product - Carbon brick. Storage capacity equals 13,000,000 gallons.
<u>Marion</u>							
*Gamble Asphalt Materials, Inc. (2951); South Pittsburg	25	4	Pond (1)	See additional information	0.100	-	Source capacity data for this pond is not available because of inadequate data. Product - Plant mixed asphalt. Storage capacity equals 200,000 gallons.
*Penn-Dixie Industries, Inc. (3241); Richard City	25	121	Tennessee River (about 417.0) Spring (1) South Pittsburg WS	5,250.000 - -	.468 .468 .009	0.368	Categories 1 and 9. The controlling upstream reservoir for this reach of the Tennessee River is Nickajack Dam located at river mile 424.7 on the Tennessee River. Product - Cement. Penn-Dixie Industries, Inc. uses an average of 477,000 gallons of water per day. Eight months of the year 468,000 gallons of water per day are withdrawn from the Tennessee River. During the remainder of the year, this same amount of water is withdrawn from the spring. Storage capacity equals 150,000 gallons.
<u>Moore</u>							
*Jack Daniel Distillery (2085); Lynchburg	27B	452	Elk River, Tims Ford Reservoir (about 135.2) Cove Spring (1) Lynchburg WS	See additional information .108 -	.622 .420 .018	.684	Categories 5 and 8. Total storage in Tims Ford Reservoir equals 325,400 acre-feet at normal minimum pool elevation of 865 feet above sea level. This provides adequate water to meet Jack Daniel's water demands for more than 90 days. Product - Tennessee Whiskey. Storage capacity equals 1,950,000 gallons.

Table 11.--Public water-supply facilities, French Broad River basin

[*System received all water from primary surface-water or ground-water source; ** purchases part or all water from a primary (*) source; *** purchases part or all water from a secondary (**) source; **** purchases part or all water from a tertiary (***) source]

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Cocke</u>									
*Newport WS	13A	13,922	4,520	French Broad River (87.1)	279.00	6.000	3.000	215.5	Category 3. High chlorine demand and drastic fluctuations in turbidity during heavy rain. Storage capacity equals 3,915,000 gallons.
<u>Greene</u>									
*Greenville WC	14A	25,000	7,411	Nolichucky River (57.2)	145.000	6.000	5.500	170.4	Category 3. Excessive turbidity and siltation problems at the water intake. Storage capacity equals 38,700,000 gallons.
**Cross Anchor UD	14B	3,365	1,078	Greenville WC	-	N/A	.285	84.7	Category 3. Storage capacity equals 100,000 gallons.
**Glen Hills UD	14A	5,039	1,610	Greenville WC	-	N/A	.442	87.7	Category 3.
***Chuckey UD	14A	4,091	1,307	Greenville WC Glen Hills UD	- -	N/A	.312 .044	87.0	Category 3. Chuckey UD also serves a part of Washington County. Storage capacity equals 600,000 gallons.
**Mosheim UD	14B	1,596	510	Greenville WC	-	N/A	.145	81.5	Category 3. Storage capacity equals 500,000 gallons.
***North Greene UD	14B	2,817	900	Mosheim UD Lick Creek (49.7)	- 6.600	.115	.015 .100	40.8	Category 3. Occasional turbidity problems. Storage capacity equals 1,225,000 gallons.
<u>Jefferson</u>									
*Dandridge WD	13D	2,316	713	Wells (3) Springs (2)	.504 .245	.345	.080 .165	105.8	Category 7. Storage capacity equals 880,000 gallons.

Table 11.--Public water-supply facilities, French Broad River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Jefferson--Continued</u>									
*Lakeland UD	13D	40	10	Wells (2)	-	N/A	.003	75.0	Category 9. Storage capacity equals 10,000 gallons.
*White Pine WD	13D	1,980	625	Wells (2)	0.144	0.400	0.168	84.8	Category 8. Storage capacity equals 200,000 gallons.
<u>Knox</u>									
*Forks of the River Industrial Park WS	13D	2,670	32	French Broad River (2.8)	132.000	2.000	.745	279.0	Category 1. The controlling upstream reservoir for this reach of the French Broad River is Douglas Dam located at river mile 32.3 on the French Broad River. Occasional turbidity problems. Storage capacity equals 2,553,500 gallons.
*Knox - Chapman UD	13D	16,405	5,578	French Broad River (3.4)	132.000	2.500	1.500	91.4	Category 1. The controlling upstream reservoir for this reach of the French Broad River is Douglas Dam located at river mile 32.3 on the French Broad River. Storage capacity equals 2,838,000 gallons.
<u>Sevier</u>									
*English Mountain WS	13D	376	41	Well (1)	-	.086	.016	42.6	Category 9. This system serves 40 homes and 118 condominiums. Storage capacity equals 72,000 gallons.

Table 11.--Public water-supply facilities, French Broad River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
<u>Sevier--Continued</u>									
*Pigcon Forge WS	13D	7,200	1,260	Walden Creek (8.9)	1.600	2.600	.680	80.6	Category 3. The Pigeon Forge WS serves about 4,100 people during the winter and 11,700 people during the summer with an estimated mean of about 7,200 people. Maximum connections equal about 1,260. Poor water quality due to fecal coliform from upstream campgrounds. Storage capacity equals 2,320,000 gallons.
**Gatlinburg WS	13D	16,000	2,048	West Prong Little Pigeon River (at the Great Smoky Mountains National Park boundary)	5.000	2.000	1.800	122.8	Categories 3 and 7. Population served by this system ranges from about 3,000 during the winter to 35,000 during the summer with the estimated mean being about 16,000. Total connections ranges from a minimum of 1,979 to a maximum of 2,117 with the estimated mean being about 2,048. Storage capacity equals 7,078,000 gallons.
				Well (1) Pigeon Forge WS	.072		.065	.100	
***Chalet Village North UD	13D	486	139	Gatlinburg WS	-	N/A	.016	32.9	Categories 3 and 7. Storage capacity equals 100,000 gallons.
*Sevierville WS	13D	7,598	2,630	East Prong Little Pigeon River (7.3)	1.900	2.000	.900	118.5	Category 3. Occasional industrial spills and some turbidity during heavy rain. Storage capacity equals 1,900,000 gallons.